

I. Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A heat sealing and cutting mechanism to form a heat seals and a cut across a tube of flexible packaging material, said heat sealing and cutting mechanism comprising:

a carrier to contact said tube;

a pair of closely spaced heat sealing bands on said carrier, said heat sealing bands being energizable to form closely spaced heat seals across said tube when said carrier is in contact with said tube and said heat sealing bands are energized; and

a cutting element on said carrier and disposed between said heat sealing bands, said cutting element being energizable to cut said tube when said carrier is in contact with said tube, an undersurface of said cutting element being serrated to define a set of spaced teeth, said teeth being embedded in an electrically insulating backing affixed to said carrier, said cutting element presenting a cutting edge in front of said backing.

2. (Previously Presented) A heat sealing and cutting mechanism according to claim 1 wherein said heat sealing bands are vulcanized onto said backing.

3. (Original) A heat sealing and cutting mechanism according to claim 2 wherein each heat sealing band has indentations formed in at least one side thereof at spaced locations to define a set of fins.

4. (Original) A heat sealing and cutting mechanism according to claim 3 wherein each heat sealing band has indentations formed in opposite sides thereof to define two sets of fins, the indentations formed in each side being generally aligned so as to generally align the fins of each set.

5. (Previously Presented) A heat sealing and cutting mechanism according to claim 2 wherein said cutting element is vulcanized onto said backing.

6. Cancelled

7. (Previously Presented) A heat sealing and cutting mechanism according to claim 1 wherein said heat sealing bands and said cutting element are curved.

8. (Previously Presented) A heat sealing and cutting mechanism according to claim 1 wherein the ends of said heat sealing bands are joined at tabs, said tabs extending beyond the ends of said backing and being connectable to a power supply.

9. (Previously Presented) A heat sealing and cutting mechanism according to claim 8 wherein tabs are formed at the ends of said cutting element, said cutting element tabs extending through said backing and said carrier and being connectable to a power supply.

10. (Original) A heat sealing and cutting mechanism according to claim 9 wherein said carrier is formed of anodized aluminum and said backing is formed of silicon rubber.

11. (Original) A heat sealing and cutting mechanism according to claim 1 wherein said heat sealing bands are convex.

12. (Previously Presented) A heat sealing and cutting station for a container forming apparatus to form heat seals and cuts across a fluid filled tube of flexible packaging material at longitudinally spaced locations, said heat sealing and cutting station comprising:

a heat sealing and cutting mechanism including:

a carrier to contact said tube;

a pair of closely spaced heat sealing bands on said carrier, said heat sealing bands being energizable to form closely spaced heat seals across said

tube when said carrier is in contact with said tube and said heat sealing bands are energized; and

a cutting wire on said carrier and disposed between said heat sealing bands, said cutting wire being energizable to cut said tube when said carrier is in contact with said tube;

a support on which said carrier is mounted, on one side of said tube, said support being movable between a retracted position where said carrier is spaced from said tube and an extended position where said carrier is in contact with said tube;

a backing plate on an opposite side of said tube, said backing plate being aligned with said carrier and being movable between a retracted position spaced from said tube and an extended position in contact with said tube; and

a drive operable on said support and said backing plate to move said carrier and backing plate between the retracted positions where said tube is free and said extended positions where said tube is trapped between said carrier and backing plate wherein an undersurface of said cutting wire is serrated to define a set of spaced teeth, said teeth being embedded in an electrically insulated backing affixed to said carrier, said cutting wire presenting a cutting edge in front of said backing.

13. (Previously Presented) A heat sealing and cutting station according to claim 12 wherein said heat sealing bands and said cutting wire are vulcanized onto said electrically insulating backing, said cutting wire being generally centrally disposed between said heat sealing bands.

14. (Original) A heat sealing and cutting station according to claim 13 wherein each heat sealing band has indentations formed in at least one side thereof at spaced locations to define a set of fins.

15. (Original) A heat sealing and cutting station according to claim 14 wherein each heat sealing band has indentations formed in opposite sides thereof to define two sets of fins, the indentations formed in each side being generally aligned so as to generally align the fins of each set.

16. (Original) A heat sealing and cutting station according to claim 12 wherein said backing plate has an electrically insulating backing thereon, said backing being convex in shape and having a groove formed therein, said groove being aligned with said cutting wire.

17. Cancelled

18. (Previously Presented) A heat sealing and cutting station according to claim 16 wherein said carrier is formed of anodized aluminum and wherein said backings are formed of silicon rubber.

19. (Previously Presented) A heat sealing and cutting station for a container forming apparatus to form heat seals and cuts across a tube of flexible packaging material at longitudinally spaced locations, said heat sealing and cutting station comprising:

- at least one set of jaws moveable between an open position where said tube is free and a closed position where said tube is trapped between said jaws;

- a heat sealing and cutting mechanism carried by one of said jaws, said heat sealing and cutting mechanism including:

- a pair of curved, closely spaced heat sealing bands mounted on an electrically insulating backing, said heat sealing bands being energizable to form closely spaced heat seals across said tube when said tube is trapped between said jaws and said heat sealing bands are energized; and

- a cutting element on said one jaw and disposed between said heat sealing bands, said cutting element being energizable to cut said tube when said tube is trapped between said jaws, an undersurface of said cutting element being serrated to define a set of spaced teeth, said teeth being embedded in said backing, said cutting element presenting a cutting edge in front of said backing; and

- at least one power supply to energize said heat sealing bands and said cutting wire.

20. (Original) A heat sealing and cutting station according to claim 19 wherein each heat sealing band has indentations formed in at least one side thereof at spaced locations to define a set of fins.

21. (Original) A heat sealing and cutting station according to claim 20 wherein each heat sealing band has indentations formed in opposite sides thereof to define two sets of fins, the indentations formed in each side being generally aligned so as to generally align the fins of each set.

22. (Previously Presented) A heat sealing and cutting mechanism according to claim 19 wherein said heat sealing bands are convex.

23. (Original) A heat sealing and cutting mechanism according to claim 22 wherein said other jaw carries an insulating convex backing.

24. (Previously Presented) A heat sealing and cutting mechanism according to claim 23 wherein said convex backing has a groove formed therein that is aligned with said cutting element.

Claims 25 to 33. Cancelled

34. (Currently Amended) A heat sealing and cutting mechanism to form [a] heat seals and a cut across a tube of flexible packaging material, said heat sealing and cutting mechanism comprising:

a set of jaws moveable between an open position where said tube is free and a closed position where said tube is trapped between said jaws;

a pair of closely spaced, generally convex heat sealing bands on one of said jaws, said heat sealing bands being energizable to form closely spaced heat seals across said tube when said jaws are in said closed position and said heat sealing bands are energized;

a cutting element on said one jaw disposed between said heat sealing bands, said cutting element being energizable to cut said tube when said jaws are in said closed position; and

a convex backing on the other of said jaws, said convex backing being formed of rubber-like material and having a shallow rounded groove therein that is aligned with said cutting element, said groove being free of any insert and accommodating said cutting element when said jaws are in said closed position.

35. (Previously Presented) A heat sealing and cutting mechanism according to claim 34 wherein said heat sealing bands and cutting element are vulcanized onto an electrically insulating backing that is affixed to said one jaw.

36. Cancelled

37. (Previously Presented) A heat sealing and cutting mechanism according to claim 34 wherein said heat sealing bands and said cutting element are curved.

38. (Previously Presented) A heat sealing and cutting mechanism according to claim 35 wherein the ends of said heat sealing bands are joined at tabs, said tabs extending beyond the ends of said backing and being connectable to a first power supply.

39. (Previously Presented) A heat sealing and cutting mechanism according to claim 38 wherein tabs are formed at the ends of said cutting element, said cutting element tabs extending through said backing and said carrier and being connectable to a second power supply.

40. (Previously Presented) A heat sealing and cutting mechanism according to claim 35 wherein said carrier is formed of anodized aluminum and said backing is formed of silicon rubber.

41. (Currently Amended) A heat sealing and cutting station for a container forming apparatus to form heat seals and cuts across a fluid filled tube of flexible packaging

material at longitudinally spaced locations, said heat sealing and cutting station comprising:

a heat sealing and cutting mechanism including:

a carrier to contact said tube;

a pair of closely spaced, generally convex heat sealing bands on said carrier, said heat sealing bands being energizable to form closely spaced heat seals across said tube when said carrier is in contact with said tube and said heat sealing bands are energized; and

a cutting element on said carrier ~~and~~ disposed between said heat sealing bands, said cutting element being energizable to cut said tube when said carrier is in contact with said tube;

a support on which said carrier is mounted, on one side of said tube, said support being movable between a retracted position where said carrier is spaced from said tube and an extended position where said carrier is in contact with said tube;

a backing plate on an opposite side of said tube, said backing plate being aligned with said carrier and being movable between a retracted position spaced from said tube and an extended position in contact with said tube, said backing plate presenting a generally convex surface towards said carrier and having a rounded shallow groove therein aligned with said cutting element, said groove being free of any insert; and

a drive operable on said support and said backing plate to move said carrier and backing plate between the retracted positions where said tube is free and the extended positions where said tube is trapped between said carrier and backing plate, with said groove accommodating said cutting element.

42. (Previously Presented) A heat sealing and cutting station according to claim 41 wherein said heat sealing bands and cutting element are vulcanized onto an electrically insulating backing that is affixed to said carrier, said cutting element being generally centrally disposed between said heat sealing bands.

43. (Previously Presented) A heat sealing and cutting station according to claim 42 wherein said backing plate has an electrically insulating backing thereon, said backing being convex in shape and having said groove formed therein.

44. (Previously Presented) A heat sealing and cutting station according to claim 43 wherein said carrier is formed of anodized aluminum and wherein said backings are formed of silicon rubber.

45. (Currently Amended) A heat sealing and cutting station for a container forming apparatus to form heat seals and cuts across a tube of flexible packaging material at longitudinally spaced locations, said heat sealing and cutting station comprising:

at least one set of jaws moveable between an open position where said tube is free and a closed position where said tube is trapped between said jaws;

a heat sealing and cutting mechanism carried by one of said jaws, said heat sealing and cutting mechanism including:

a pair of curved, closely spaced heat sealing bands mounted on an electrically insulating backing, said heat sealing bands being energizable to form closely spaced heat seals across said tube when said tube is trapped between said jaws and said heat sealing bands are energized; and

a cutting element on said one jaw disposed between said heat sealing bands, said cutting element being energizable to cut said tube when said tube is trapped between said jaws;

a generally convex backing carried by the other of said jaws, said backing having a shallow rounded groove formed therein that is free of any insert to accommodate said cutting element when said at least one set of jaws is in said closed position; and

at least one power supply to energize said heat sealing bands and said cutting element.

46. Cancelled

47. Cancelled

48. (Previously Presented) A heat sealing and cutting mechanism according to claim 45 wherein said heat sealing bands and cutting element are curved and wherein said heat sealing bands are generally convex.

Claims 49 to 53. Cancelled

54. (Previously Presented) A heat sealing and cutting mechanism to form heat seals and a cut across a tube of flexible packaging material, comprising:

a pair of members movable relative to one another between an open condition where said tube is free and a closed condition where said tube is trapped between said members;

at least one heat sealing band on one of said members, said at least one heat sealing band presenting an outer generally convex surface facing said tube, said at least one heat sealing band forming a heat seal across said tube when said at least one heat sealing band is energized and said members are in said closed condition; and

a cutting element on one of said members, said cutting element forming a cut across said tube when said cutting element is energized and said members are in said closed condition, an undersurface of said cutting element being serrated to define a set of spaced teeth, said teeth being embedded in a backing affixed to said one member, said cutting element presenting a cutting edge in front of said backing.

55. Cancelled

56. (Previously Presented) A heat sealing mechanism according to claim 54 wherein said at least one heat sealing band and said cutting element are vulcanized on said backing.

57. (Previously Presented) A heat sealing mechanism according to claim 56 including a pair of closely spaced heat sealing bands on said one member.

58. (Previously Presented) A heat sealing and cutting mechanism according to claim 54 wherein said at least one heat sealing band and said cutting element are on the same member.

59. (Previously Presented) A heat sealing and cutting mechanism according to claim 58 wherein said cutting element extends forwardly from said one member and wherein a second of said members has a groove therein corresponding in shape to said cutting element, said groove accommodating said cutting element when said members are in said closed condition.

60. (Previously Presented) A heat sealing and cutting mechanism according to claim 59 wherein said second member includes an insulating backing to contact said tube, said insulating backing having said groove formed therein.

Claims 61 to 65 Cancelled

66. (Currently Amended) A heat sealing and cutting mechanism to form a heat seal and a cut across a tube of flexible packaging material, comprising:

a pair of support elements movable relative to one another between an open condition where said tube is free and a closed condition where said tube is trapped between said members;

at least one heat sealing band on a first of said support elements, said at least one heat sealing band forming a heat seal across said tube when said at least one heat sealing band is energized and said support elements are in said closed condition;

a cutting element on said first support element and having a serrated undersurface facing said first support element, said cutting element forming a cut across said tube when said cutting element is energized and said support elements are in said closed condition; and

a backing on a second of said support elements, said backing having a groove formed therein aligned with said cutting element to accommodate said cutting element when said support elements are in said closed condition.

67. (Previously Presented) A heat sealing and cutting mechanism according to claim 66 wherein said backing presents a generally convex surface towards said first support element.

68. (Previously Presented) A heat sealing and cutting mechanism according to claim 67 wherein a pair of heat sealing bands are provided on said first support element and wherein said cutting element is positioned between said heat sealing bands.

69. (Currently Amended) A heat sealing and cutting mechanism according to claim [67] 68 wherein said heat sealing bands and cutting element are curved.

70. (Previously Presented) A heat sealing and cutting mechanism according to claim 69 wherein said heat sealing bands present convex surfaces towards said backing.